

What is claimed is:

- 5
1. A digital security system comprising:
at least one camera unit for capturing and transmitting frames of video and/or audio signals over a communications network;
at least one customer server coupled to the camera unit via the communications network;
at least one customer work station coupled to the customer server via the communications network;
an administrator server coupled to the at least one client server via the communications
10 network; and
authentication means at the administrator server for authenticating a customer at the at least one customer work station so as to allow the work station to receive the video and/or audio signals transmitted by the at least one camera unit.
- 15 2. The system of claim 1, wherein the camera unit transmits video and/or audio signals over the communications network only after detecting a predefined event.
3. The system of claim 1, wherein the camera unit transmits video and/or audio signals over the communications network in response to receiving a command from a user at the
20 customer work station or an administrator work station.
4. The system of claim 1, wherein the camera unit tags the frames of video and/or audio signals based upon detecting one of a plurality of predefined events.
- 25 5. The system of claim 1, wherein the camera unit transmits an event packet when a predefined event is detected.
6. The system of claim 1, wherein the camera unit is programmable to transmit either a snap shot or an event clip upon detecting a predefined event.
- 30 7. The system of claim 1, wherein the camera unit is programmable to simultaneously transmit both a snap shot and an event clip upon detecting a predefined event.

9. The system of claim 1, wherein the camera unit is operable in a plurality of modes.
10. The system of claim 9, wherein the camera unit may be remotely configured to operate in one of the plurality of modes via the at least one customer work station.
- 5 11. The system of claim 1, wherein the camera unit includes a glass break detector.
12. The system of claim 11, wherein the glass break detector includes: an audio input receiver means, a digital signal processor for computing spectrograms of incoming audio
10 signals, and a means for comparing a predefined glass break spectrogram template against the spectrograms computed by the digital signal processor.
13. The system of claim 1, wherein the camera unit includes a motion detector that analyzes the video signals captured by the camera unit.
- 15 14. The system of claim 13, wherein the motion detector comprises a digital signal processor that includes an automatic learn component that automatically updates a stored background image against which the digital signal processor performs motion analysis detection.
- 20 15. The system of claim 13, wherein the camera unit increases one or more of the bit rate, pixel coding depth, the image size, frame rate, and compression algorithm format associated with the video signals in response to detecting motion in the video signals.
- 25 16. The system of claim 13, wherein the camera unit includes an object detector.
17. The system of claim 13, wherein the camera unit includes an object speed detector.
18. The system of claim 13, wherein the camera unit determines whether to transmit an
30 event packet over the network based on the speed of the detected object.
19. The system of claim 13, wherein the camera unit includes an object movement detector that detects the direction of movement of a detected object.

20. The system of claim 19, wherein the camera unit determines whether to transmit an event packet over the network based on what direction the detected object is moving.

21. The system of claim 1, wherein the authentication means includes means to compare
5 inputted user identification information against a database of monitored sites to which the user may access.

22. The system of claim 1, wherein the administrator server receives the event packets and associated video and/or audio information, and intelligently routes the packets and
10 information to one or more administrator work stations.

23. The system of claim 1, wherein the administrator server includes means for receiving event packet information from the at least one camera unit, and means for transmitting relevant contact information to one or more administrator work stations.

15 24. The system of claim 1, wherein the administrator server includes means for receiving the event packet information from the at least one camera unit and means for automatically contacting one or more of the local police, local fire department, and customer contact.

20 25. The system of claim 1, wherein the camera unit includes:
a camera system;
an encoder coupled to the camera system that encodes the video signals transmitted by the camera system;
and an automatic gain controller coupled to the camera system and the encoder, the
25 automatic gain controller receiving mean, maximum, and minimum intensity video signal values from the camera system, and variance and delta values from the encoder, and providing in response a control signal that controls the gain of the camera system so that the camera unit transmits video signals with substantially constant image luminance for varying lighting conditions.

30 26. The system of claim 1, wherein the camera unit includes:
a camera system;
an encoder coupled to the camera system that encodes the video signals transmitted by the camera unit;

35 an encoder buffer coupled to the encoder; and

an encoder buffer controller coupled to the camera system and the encoder buffer, the encoder buffer controller receiving as inputs an in buffer bit rate input from the encoder, and an out buffer bit rate from the encoder buffer.

5 27. The system of claim 1, wherein the camera unit includes a network bandwidth controller that adjusts the signal transmission delay of the camera unit as a function of a network collision rate and the priority of the camera unit.

28. The system of claim 27, wherein the camera unit autonomously determines its
10 priority based on the type of predefined event it is experiencing.

29. The system of claim 1, wherein the camera unit is coupled to a conventional sensor.

30. The system of claim 29, wherein the camera unit is configured to receive an alarm
15 signal from the conventional sensor, and to transmit an event packet over the network in response to receiving the alarm signal from the conventional sensor.

31. The system of claim 30, wherein the camera unit starts transmitting video and/or
20 audio signals in response to receiving the alarm signal from the conventional sensor.

32. The system of claim 30, wherein the camera unit changes a characteristic of
transmitted video and/or audio signals in response to receiving the alarm signal from the
conventional sensor.

25 33. The system of claim 29, wherein the camera unit performs boolean analysis of an alarm signal sent by the conventional sensor and an event detected by the camera unit before transmitting an event packet over the network.

34. The system of claim 1, wherein the camera unit simultaneously transmits video
30 signals in more than one compression algorithm standard format in response to detecting certain predefined events.

35. The system of claim 1, wherein the camera unit simultaneously transmits video
35 signals according to the JPEG format and the H.263 format in response to detecting certain predefined events.

36. The system of claim 1, wherein the camera unit simultaneously transmits video signals having differing bit rates.

37. The system of claim 1, wherein the camera unit simultaneously transmits video signals having differing frame rates.

38. The system of claim 1, wherein the camera unit simultaneously transmits video signals having differing pixel coding depths.

39. The system of claim 1, further comprising at least one administrator workstation coupled to the administrator server.

40. The system of claim 39, wherein a graphical user interface is provided at one of the administrator or customer workstations, and wherein the graphical user interface schematically displays event durations for a plurality of camera units.

41. The system of claim 39, wherein the video or audio information schematically represented by the event duration display is accessible by a user clicking on the event duration display.

42. The system of 39, wherein the customer and administrator work stations include a multi-algorithm reader that allows the work stations to display successive frames of video signals encoded in different compression algorithm standard formats.

43. The system of claim 4, wherein the camera unit tags the frames of video and/or audio signals by inserting information in the header of the transmitted frames that identifies the predefined event.

44. The system of claim 5, wherein the event packet includes information in the header

45. The system of claim 1, wherein the event packet includes information in the header that identifies the predefined event